PARADISE PARK RESERVOIR

Introduction

Paradise Park Reservoir is an intermediate size reservoir on the south slope of the High Uintas. It is at the terminus of a well maintained gravel road with a campground by the reservoir. It has a small, natural watershed and provides hiking opportunities. Paradise Park Reservoir was created in 1924 by the construction of an earth-fill dam. The reservoir shoreline is owned by the Ashley National Forest, and public access is unrestricted.

Characteristics and Morphometry

Lake elevation (meters / feet)	3,036 / 9,958
Surface area (hectares / acres)	57.8 / 143
Watershed area (hectares / acres)	996 / 2,461
Volume (m^3 / acre-feet)	
capacity	3,870,000 / 3,135
conservation pool	0
Annual inflow (m^3 / acre-feet)	
Retention time (years)	
Drawdown (m^3 / acre-feet)	
Depth (meters / feet)	
maximum	11.28 / 37
mean	6.09 / 20
Length (meters / feet)	1,220 / 4,000
Width (meters / feet)	610 / 2,000
Shoreline (km / miles)	2.97 / 1.8

Reservoir water is consumed entirely for irrigation. Fifty percent of the volume of the reservoir is drained off before mid-summer for agricultural purposes and the remaining 50% is retained as a conservation pool. Water use is not expected to change in the foreseeable future.

Recreation

Location

County	Uinta
Longitude / Latitude	109 54 56 / 40 40 04
USGS Map	Paradise Park 1965
DeLorme's Utah Atlas & Gazetteer™	Page 56, B-1
Cataloging Unit	Duchesne River (14060003)

Paradise Park Reservoir is north of LaPoint in the Uinta Basin. From U-121 in LaPoint, go north on a paved road for about seven miles to a fork, take the left fork. As the pavement ends and leaves the Uinta and Ouray Indian Reservation it enters the National Forest, becoming FS-104. The reservoir is about 16 miles into the National Forest. The route is well marked, but the road at times is v e r y r o u g h

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due to washboard development in the road.

Fishing, boating, swimming, camping, picnicking, and hiking are all popular. While there are no boat ramps, it is generally possible to get a boat on the reservoir. The USFS recommends that boats be less than 14' long.

Recreational facilities at the reservoir include a Paradise Park Campground, a USFS facility, which has primitive latrines, picnic areas, and 15 campsites. Usage fees are not charged.

Watershed Description

Paradise Park Reservoir is located in the High Uintas. It is an impoundment of Paradise Creek, a tributary to the Whiterocks River. The watershed consists entirely of alpine meadows and coniferous forests. Slopes surrounding the reservoir are not particularly steep (<20%). The reservoir is an impoundment of a meadow. The watershed lies slightly south of the high peaks along the ridgeline.

The watershed high point, the shoulder of an unnamed ridge northwest of the reservoir, is 3,392 m (11,130 ft) above sea level, thereby developing a complex slope of 9.0% to the reservoir. The average stream gradient of Paradise Creek is 7.0% (403 feet per mile) The inflow and outflow is Paradise Creek. It may be intermittent by the end of the summer.

The soil associations that compose the watershed are listed in Appendix III.

The vegetation communities consist of spruce-fir, meadows and aspen. The watershed receives 76 - 102 cm (30 - 40 inches) of precipitation annually. The frost-free season around the reservoir is 0 - 20 days per year.

Land use in the watershed is 100% multiple use, with grazing and human recreation being the primary uses. Some of the watershed has been logged in the past, but there are no active or proposed timber sales in the area.

Limnological Assessment

The water quality of Paradise Park Reservoir is very good. It is considered to be very soft with a hardness concentration value of approximately 7 mg/L (CaCO3). The parameters that have exceeded State water quality standards for defined beneficial uses are dissolved oxygen and pH. Dissolved oxygen concentrations in late summer substantiate the fact that water quality impairments do exist. Concentrations dropped dramatically in the hypolimnion. The profile of September 4, 1991 indicates that stratified conditions may have existed earlier in the summer when the depth of the reservoir was greater. These low levels of dissolved oxygen indicate that there is a substantial demand for oxygen at the sediment-water interface. Although this may not create a problem for the fishery during the productivity season, depletion of the dissolved oxygen during winter months may be extensive enough to impair the fishery.

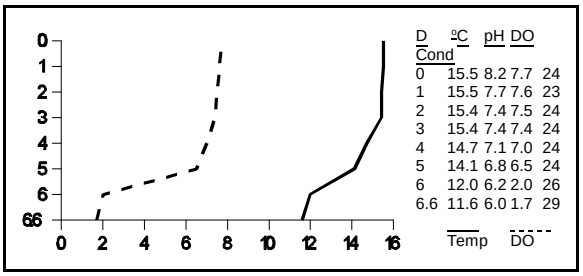
Limnological Data

Data sampled from STORET site: 593262

Surface Data	1991
Trophic Status	M
Chlorophyll TSI	38.33
Secchi Depth TSI	50.25
Phosphorous TSI	32.88
Average TSI	40.49
Chlorophyll a (ug/L)	2.2
Transparency (m)	2.1
Total Phosphorous (ug/L)	7
pH	7.9
Total Susp. Solids (mg/L)	3.5
Total Volatile Solids (mg/L)	4
Total Residual Solids (mg/L)	1
Temperature (°C / °f)	14/58
Conductivity (umhos.cm)	23
Water Column Data	
Ammonia (mg/L)	0.03
Nitrate/Nitrite (mg/L)	0.03
Hardness (mg/L)	9.5
Alkalinity (mg/L)	7
Silica (mg/L)	2.7
Total Phosphorous (ug/L)	5
Miscellaneous Data	
Limiting Nutrient	N
DO (Mg/l) at 75% depth	6.5
Stratification (m)	5
Depth at Deepest Site (m)	6.6

Current data suggest that the reservoir is currently a nitrogen limited system. TSI values indicate the reservoir is mesotrophic but this may be skewed higher than it really is due to the elevated transparency TSI value. The phosphorus and chlorophyll-a concentrations are relatively low at 5 and 2.2 ug/L respectively. The high transparency TSI value may be due to increased turbidity from the shallowness of the reservoir. The reservoir is probably upper oligotrophic to low mesotrophic.

According to DWR no fish kills have been reported in recent years. The reservoir supports populations of brook trout (*Salvelinus fontinalis*), rainbow trout (*Oncorhynchus mykiss*), and cutthroat trout (*Oncorhynchus clarki*). The lake has not been treated for rough fish competition, so populations of native fishes may still be present in the lake. Current stocking reports indicate that DWR stocks the reservoir with 5,000 catchable rainbow trout and 7,000 fingerling brook trout.



D	°C	pH	DO	Cond
0	15.5	8.2	7.7	24
1	15.5	7.7	7.6	23
2	15.4	7.4	7.5	24
3	15.4	7.4	7.4	24
4	14.7	7.1	7.0	24
5	14.1	6.8	6.5	24
6	12.0	6.2	2.0	26
6.6	11.6	6.0	1.7	29

Phytoplankton in the euphotic zone include the following taxa (in order of dominance)

Species	Cell Volume (mm^3/liter)	% Density By Volume
Spherical green alga	0.008	37.47
Oocystis sp.	0.008	35.13
Pennate diatoms	0.003	14.05
Centric diatoms	0.003	13.35
Total	0.022	
Shannon-Weaver [H']	1.28	
Species Evenness	0.92	
Species Richness	0.18	

The phytoplankton community is dominated by green algae and diatoms indicative of low productivity and good water quality.

Pollution Assessment

Nonpoint pollution sources include gazing and recreation. Each summer, 400 cattle gaze in the area and on the shore line of the reservoir.

There are no point sources of pollution in the watershed.

Beneficial Use Classification

The state beneficial use classifications include: boating and similar recreation (excluding swimming) (2B), cold water game fish and organisms in their food chain (3A) and agricultural uses (4).

Information

Management Agencies	
Uinta Basin Association of Governments	722-4518
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146
Ashley National Forest	789-1181
Vernal Ranger District	789-1181
Recreation	
Dinosaurland Travel Region (Vernal)	789-6932
Vernal Chamber of Commerce	789-1352
Reservoir Administrators	
Whiterocks Irrigation Company	247-2327

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